AMENDMENTS TO THE CLAIMS

Please amend claims 1, 6 and 18 as indicated among the following complete set of pending claims:

Claim 1. (Currently amended) A method for ~~preprocessing~~ processing an audio signal ~~to be processed by a codec having a variable coding rate determined based on a characteristic of the audio signal~~, comprising the steps of:

performing a pitch harmonic enhancement ("PHE") preprocessing of the audio signal ~~before the audio signal is processed by the codec to thereby enhance~~, wherein the PHE preprocessing enhances the pitch components of the audio signal;

determining an encoding rate from a plurality of encoding rates based on a characteristic of the PHE preprocessed audio signal; and

encoding the PHE preprocessed audio signal with the determined encoding rate at a codec having the plurality of encoding rates.

Claim 2. (Previously presented) A method as defined in claim 1, wherein said step of performing PHE preprocessing is to modify the audio signal such that a long-term prediction gain of the audio signal is increased.

Claim 3. (Original) A method as defined in claim 1, wherein said step of performing PHE preprocessing comprises the step of: applying a smoothing filter in a frequency domain.

Claim 4. (Original) A method as defined in claim 3, wherein said step of applying a smoothing filter comprises the step of: applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

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Claim 5. (Original) A method as defined in claim 1, wherein said step of performing PHE preprocessing comprises the step of performing Residual Peak Enhancement ("RPE").

Claim 6. (Currently amended) A method as defined in claim 1 wherein said step of performing PHE preprocessing comprises the step of: applying a smoothing filter in a frequency domain; and performing RPE, wherein said step of applying a smoothing filter is selectively performed depending on ~~the property~~ a characteristic of the audio signal.

Claim 7. (Original) A method as defined in claim 6, wherein said step of applying a smoothing filter comprises the step of: applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

Claim 8. (Original) A method as defined in claim 7, wherein said step of applying MTNF comprises the steps of: evaluating a Global Masking Threshold ("GMT") curve of the audio signal in accordance with a perceptual sound model; and selectively suppressing frequency components under said GMT curve.

Claim 9. (Original) A method as defined in claim 8, wherein said step of evaluating a GMT curve comprises the steps of: normalizing absolute Sound Pressure Level ("SPL") by analyzing frequency components of the audio signal; determining tone maskers and noise maskers; reconstructing maskers by selecting a set of maskers among said determined maskers; calculating individual masking thresholds for the selected set of maskers; and calculating GMT from the calculated individual maskers.

Claim 10. (Original) A method as defined in claim 8, wherein said frequency suppressing step comprises the steps of: making the portion below the GMT curve 0.

Claim 11. (Original) A method as defined in claim 8, wherein said frequency suppressing step comprises the steps of: multiplying by a cosine smoothing function to the portion below the GMT curve.

Claim 12. (Original) A method as defined in claim 5, wherein said step of performing RPE comprises the steps of: multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby enhancing the components at the multiples of pitch frequency relative to other components.

Claim 13. (Original) A method as defined in claim 6, wherein said step of performing RPE comprises the steps of: multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby enhancing the components at the multiples of pitch frequency relative to other components.

Claim 14. (Original) A method as defined in claim 5, wherein said step of performing RPE comprises the steps of: increasing selected frequency components to corresponding GMT values, thereby enhancing the components at the multiples of pitch frequency relative to other components.

Claim 15. (Original) A method as defined in claim 6, wherein said step of performing RPE comprises the steps of: increasing selected frequency components to corresponding GMT values, thereby enhancing the components at the multiples of pitch frequency relative to other components.

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Claim 16. (Original) A method as defined in claim 1, further comprising the step of performing dynamic range compression ("DRC") preprocessing by an AGC (Automatic Gain Control) preprocessing.

Claim 17. (Original) A method as defined in claim 16, wherein said AGC preprocessing comprises the steps of: calculating a forward-direction signal level; calculating a backward-direction signal level; and generating a processed signal by calculating a final signal level based on said calculated forward and backward signal levels.

Claim 18. (Currently amended) A system for ~~preprocessing~~ processing an audio signal ~~to be processed by a codec having a variable coding rate determined based on a characteristic of the audio signal~~, comprising:

means for performing a pitch harmonic enhancement ("PHE") preprocessing of the audio signal ~~before the audio signal is processed by the codec to thereby enhance~~, wherein the PHE preprocessing enhances the pitch components of the audio signal;

means for receiving and encoding the PHE preprocessed audio signal,

wherein said means for performing PHE preprocessing comprises[[;]] means for applying a smoothing filter in a frequency domain selectively depending on ~~the property~~ a characteristic of the audio signal; and

means for performing ~~RPE~~ residual peak enhancement,

wherein said means for receiving and encoding the PHE preprocessed audio signal determines an encoding rate from a plurality of encoding rates based on a characteristic of the PHE preprocessed audio signal and encodes the PHE preprocessed audio signal with the determined encoding rate.

Claim 19. (Original) A system as defined in claim 18, wherein said means for applying a smoothing filter comprises means for applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

Claim 20. (Original) A system as defined in claim 19, wherein said means for applying MTNF comprises: means for evaluating a Global Masking Threshold ("GMT") curve of the audio signal in accordance with a perceptual sound model; and means for selectively suppressing frequency components under said GMT curve.

Claim 21. (Original) A system as defined in claim 20, wherein said means for evaluating a GMT curve comprises: means for normalizing absolute Sound Pressure Level ("SPL") by analyzing frequency components of the audio signal; means for determining tone maskers and noise maskers; means for reconstructing maskers by selecting a set of maskers among said determined maskers; means for calculating individual masking thresholds for the selected set of maskers; and means for calculating GMT from the calculated individual maskers.

Claim 22. (Original) A system as defined in claim 18, wherein said means for performing RPE comprises: means for multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby enhancing the components at the multiples of pitch frequency relative to other components.

Claim 23. (Original) A system as defined in claim 18, wherein said means for performing

RPE comprises: means for increasing selected frequency components to corresponding GMT

values, thereby enhancing the components at the multiples of pitch frequency relative to

other components.